

Claims

1. A method of encoding a TRAU frame for a speech signal having a plurality of transport channels, the method including the steps of:
 - 5 a) determining a coding type for the speech signal;
 - b) determining a set of bits associated with each transport channel of the speech signal;
 - c) determining a priority for each transport channel;
 - d) inserting into a TRAU frame the set of bits associated with the transport
10 channel of highest priority; and
 - e) repeating the inserting step sequentially for each transport channel in order of priority.
2. A method according to claim 1 further including the steps of:
 - 15 a) determining any error checking associated with each transport channel;
 - b) computing any error check bits for each transport channel; and
 - c) the step of inserting further comprising inserting any error check bits associated with such transport channel after the set of bits for that channel..
- 20 3. A method according to claim 1 or claim 2 further including the step of inserting control bits into said TRAU frame.
4. A method according to claim 3 wherein the control bits are inserted in a reserved location.
- 25 5. A method according to claim 3 or claim 4 in which the control bits include a transport format combination indicator.
6. A method according to any one of claims 2 to 5 in which the speech signal
30 includes two transport channels comprising a set of class A bits and a set of class B bits, at least a portion of the class A bits being associated with a cyclic

redundancy check, wherein a set of cyclic redundancy check bits are compiled in dependence on all the class A bits, the TRAU frame including, in sequence, the set of class A bits, the set of check bits, and the set of Class B bits.

- 5 7. A method according to claim 6 wherein the TRAU frame comprises an initial set of control bits.
8. A method according to claim 7 wherein the set of cyclic redundancy bits are compiled in further dependence on at least one control bit.
- 10 9. A method of decoding a received TRAU frame comprising sets of bits corresponding to a plurality of transport channels for a speech signal ordered in sequence in accordance with a priority associated with said channels, the method including the steps of:
- 15 a) determining a coding type for the speech signal;
b) locating a set of bits corresponding to each transport channel; and
c) decoding the transport channels in dependence on the recovered data bits in accordance with the determined coding type.
- 20 10. A method according to claim 9 further comprising the steps of:
a) locating any error check bits associated with each transport channel; and
b) in dependence on the presence of error checking bits, error checking each transport channel.
- 25 11. A method according to claim 9 or claim 10 wherein the method includes the step of locating a set of control bits, said control bits including an indication of the coding type of the speech signal.
- 30 12. A method according to claim 11 wherein said set of control bits includes a transport format combination identifier.

13.A TRAU frame comprising sets of bits corresponding to a plurality of transport channels for a speech signal ordered in sequence in accordance with a priority associated with said channels.

5 14.A TRAU frame according to claim 13 in which at least one transport channel is associated with error checking bits, said error checking bits being ordered in sequence with the associated data bits.

10 15.A TRAU frame according to claim 13 or claim 14 further including a set of control bits.

16.A TRAU frame according to claim 15 wherein the control bits include an indication of the coding of the speech signal.

15 17.A TRAU frame according to claim 16 wherein the indication is a transport format combination identifier.

20 18.A TRAU frame comprising, in sequence, a set of control bits, a set of class A bits, a set of error check bits, and a set of Class B bits, the set of control bits including at least one bit identifying the location of the other sets of bits in the frame.

19.A transcoder/rate adaptor unit adapted to encode a TRAU frame, including:

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- a) coding detection means for determining a coding type for the speech signal;
 - b) data determining means for determining a set of bits associated with each transport channel of the speech signal;
 - c) priority determining means for determining a priority for each transport channel;
 - d) insertion means for inserting into a TRAU frame the set of bits associated with the transport channel of highest priority; and
 - 30 e) the insertion means being adapted to sequentially insert each transport channel in order of priority.

20. A transcoder/rate adaptor unit according to claim 19 further including:

- a) error check determining means for determining any error checking associated with each transport channel;
- 5 b) error check computing means for any error check bits for each transport channel; and
- c) the insertion means being further adapted to insert any error check bits associated with such transport channel after the set of bits for that channel..

10 21. A transcoder/rate adaptor unit according to claim 19 or claim 20 wherein the insertion means is further adapted to insert control bits into said TRAU frame.

22. A transcoder/rate adaptor unit according to claim 21 wherein the control bits are inserted in a reserved location.

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23. A transcoder/rate adaptor unit according to claim 21 or claim 23 in which the control bits include a transport format combination indicator.

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24. A transcoder/rate adaptor unit according to any one of claims 20 to 23 in which the speech signal includes two transport channels comprising a set of class A bits and a set of class B bits, at least a portion of the class A bits being associated with a cyclic redundancy check, wherein a set of cyclic redundancy check bits are compiled in dependence on all the class A bits, the insertion means being adapted to include in the TRAU frame, in sequence, the set of class A bits, the set of check bits, and the set of class B bits.

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25. A transcoder/rate adaptor unit according to claim 24 wherein the insertion means is adapted to insert in the TRAU frame an initial set of control bits.

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26. A transcoder/rate adaptor unit adapted to decode a TRAU frame comprising sets of bits corresponding to a plurality of transport channels for a speech signal

ordered in sequence in accordance with a priority associated with said channels, including:

- a) coding determining means for determining a coding type for the speech signal;
- b) location determining means for locating a set of bits corresponding to each transport channel; and
- c) decoding means for decoding the transport channels in dependence on the recovered data bits in accordance with the determined coding type.

27. A transcoder/rate adaptor unit according to claim 26 further including:

- a) error check location means for locating any error check bits associated with each transport channel; and
- b) error checking means for error checking each transport channel in dependence on the presence of error checking bits.

28. A transcoder/rate adaptor unit according to claim 26 or claim 27 including control location means for locating a set of control bits, said control bits including an indication of the coding type of the speech signal.

29. A transcoder/rate adaptor unit according to claim 28 wherein said set of control bits includes a transport format combination identifier.

30. A transcoder/rate adaptor unit for encoding and decoding a TRAU frame comprising sets of bits corresponding to a plurality of transport channels for a speech signal ordered in sequence in accordance with a priority associated with said channels.

31. A transcoder/rate adaptor unit according to claim 30 in which at least one transport channel is associated with error checking bits, said error checking bits being ordered in sequence with the associated data bits.

32.A transcoder/rate adaptor unit according to claim 30 or claim 31 wherein the TRAU frame includes a set of control bits.

5 33.A transcoder/rate adaptor unit according to claim 32 wherein the control bits include an indication of the coding of the speech signal.

34.A transcoder/rate adaptor unit according to claim 33 wherein the indication is a transport format combination identifier.

10 35.A transcoder/rate adaptor unit for encoding and decoding a TRAU frame comprising, in sequence, a set of control bits, a set of class A bits, a set of error check bits, and a set of Class B bits, the set of control bits including at least one bit identifying the location of the other sets of bits in the frame.

15 36.A method of encoding or decoding a transcoder/rate adaptor unit frame substantially as described herein with reference to any one of Figures 1 to 5 or 7 to 8.

20 37.A transcoder/rate adaptor unit substantially as described herein with reference to any one of Figures 1 to 5 or 7 to 8.